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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,313	07/02/2003	Dennis A. Kramer	9501-72760	4079
23643	7590	10/23/2006		
BARNES & THORNBURG LLP 11 SOUTH MERIDIAN INDIANAPOLIS, IN 46204				
			EXAMINER HANDAL, KAITLY V	
			ART UNIT 1764	PAPER NUMBER

DATE MAILED: 10/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/612,313

Applicant(s)

KRAMER ET AL.

Examiner

Kaity Handal

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 9, 12, 14, 17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skala et al. (US 2003/0134166 A1) in view of Labinov et al. (US 2002/0160238 A1).

With respect to claims 9 and 14, Skala teaches a fuel reforming system (fig. 2A), comprising: and a compressor (64) with a pressurized air outlet (page 3, paragraph [0019], lines 13-14) (illustrated by arrow from compressor (64) extending to check valve (74)), and a fuel reformer (Fig. 2D, 120).

Skala fails to teach a turbocharger having a turbine with a reformat gas inlet and a reformat gas outlet fluidly coupled to the reformat gas inlet of the turbine. Labinov teaches a turbocharger having a turbine (expander) (fig. 6, 120) with a reformat gas inlet (from reformer (102) as illustrated), and a reformat gas outlet fluidly coupled to the reformat gas inlet of the turbine (expander) (120) (as illustrated) in order to produce a greater specific power and provide lower overall system cost compared to other power systems (page 3, paragraph [0036]); and wherein said turbine (120) is upstream an air compressor (106) in order to utilize the

energy produced by the expansion of the synthesis gas in the turbine (120) to drive the air compressor (106) (page 5, paragraph [0063], lines 6-8).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the reformat stream in Skala's fuel processor pass through a turbine prior to passing to a fuel cell, as taught by Labinov, in order to produce a greater specific power and provide lower overall system cost compared to other power systems and utilize the energy produced by the expansion of the synthesis gas in the turbine to drive the air compressor of Skala.

With respect to claims 12 and 17, Labinov further teaches wherein the system further comprises an electrical generator having an input coupled to an output of the turbine (expander) (120) (page 5, paragraph [0063], lines 6-9).

With respect to claims 19, Labinov further teaches wherein the expander is a turbine (page 5, paragraph [0061], lines 8-10).

3. Claims 10 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skala et al. (US 2003/0134166 A1) in view of Labinov et al. (US 2002/0160238 A1), as applied to claims 9 and 14 above, and further in view of Surma (US 6,630,113 B1).

With respect to claims 10 and 15, Skala as modified discloses all claim limitations as set forth above but fails to show wherein the turbine (expander) has a reformat gas outlet fluidly coupled to an intake of an internal combustion engine. Surma teaches a waste treatment system which comprises partial oxidation reformer (col. 62, lines 18-22), a compressor (fig. 1, 46), and an expander/turbine (52) where the latter has a gas outlet fluidly coupled to an intake of an internal combustion engine in order to generate electricity (col. 3, lines 32-35).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include an internal combustion engine fluidly connected to the gas outlet of the expander/turbine in Skala's modified apparatus, as taught by Surma, in order to generate electricity.

4. Claims 11, 13, 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skala et al. (US 2003/0134166 A1) in view of Labinov et al. (US 2002/0160238 A1), as applied to claims 9 and 14 above, and further in view of Bromberg et al. (US 2002/0194835 A1).

With respect to claims 11 and 16, Skala as modified discloses all claim limitations as set forth above but fails to show wherein the expander has a reformat gas outlet fluidly coupled to an emission abatement device. Bromberg teaches an emission abatement system which comprises a plasma fuel converter (fig. 5, 12), providing hydrogen to expander/turbine (26) which has a gas outlet (illustrated) fluidly coupled to an emission abatement device/absorber catalyst (32) which is adapted to treat NO_x in order to trap NO_x present in the exhaust (page 2, paragraph [0017], lines 1-8).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include an emission abatement device coupled to the expander/turbine gas outlet in Skala's modified apparatus, as taught by Bromberg, in order to trap NO_x present in the exhaust.

With respect to claims 13 and 18, Skala as modified discloses all claim limitations as set forth above but fails to show wherein the fuel reformer comprises a plasma fuel reformer. Bromberg teaches wherein fuel reformer comprises a plasma fuel reformer/converter (12) in order to readily transform fuel into hydrogen gas and have an instantaneous turn-on and response in a very compact unit (page 3, paragraph [0028], lines 4-6).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a plasma fuel reformer in Skala's modified apparatus, as taught by Bromberg, in order to readily transform fuel into hydrogen gas and have an instantaneous turn-on and response in a very compact unit.

Response to Arguments

Specification

Objection made to the specification is withdrawn by examiner due to applicant's amendment.

Prior Art Rejection

Applicant's arguments, see Remarks, filed 9/1/2006, with respect to the rejection(s) of claim(s) 9-19 under 35 USC 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Skala et al. and further in view of Labinov et al.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaity Handal whose telephone number is (571) 272-8520. The examiner can normally be reached on M-F 8-5.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1764

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KH

5/22/2006


ALEXA DOROSHENK NECKEL
PRIMARY EXAMINER